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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,905	01/31/2005	Harry Richard Claringburn	P/62303	1397
156 7590 04/24/2008 KIRSCHSTEIN, OTTINGER, ISRAEL & SCHIFFMILLER, P.C. 489 FIFTH AVENUE NEW YORK, NY 10017			EXAMINER LIU, LI	
			ART UNIT 2613	PAPER NUMBER
			MAIL DATE 04/24/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/500,905	Applicant(s) CLARINGBURN ET AL.	
	Examiner LI LIU	Art Unit 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/18/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed on 1/18/2008 with respect to claims 9-16 have been fully considered but they are not persuasive. The examiner has thoroughly reviewed Applicant's amendment and arguments but firmly believes that the cited reference reasonably and properly meet the claimed limitation as rejected.

1). Applicant's argument – "Caroli discloses wavelength blockers, but their function in the add/drop node is completely different from the function of the wavelength selective filter in the present invention. In Caroli's solution the blockers always work in pairs in one add/drop node". *"In Caroli's solution channels to be added are always let through the blocker on the add path."* "Although Caroli mentions "unused" optical channels, these are not the channels to be added. In paragraph 0026 is it made clear that the "unused" channels are blocked on the add path in order to avoid signal collision with signals on the through path. This means that the "unused" is a naming convention only, which relates to channels that are not to be added to the through path because they were not dropped (their presence in the through path indicates that they have not been dropped)".

Examiner's response – In claims 9, 12 and 13, the applicant claims "a multichannel wavelength selective filter with variable-per-channel attenuation for blocking channels not carrying signals to be added to the network or controlling an amplitude of the added signals, and an add coupler for coupling the add path to the network" (emphasis added). Caroli et al clearly teaches an ADD/DROP node that

comprises a multichannel wavelength selective filter with variable-per-channel attenuation (the λ -BLOCKER/DGEF 240 in Figure 2, or the λ -BLOCKER/DGEF 440 in Figure 2) for blocking channels not carrying signals to be added to the network ([0028], [0031]-[0033], [0048]) or controlling an amplitude of the added signals ([0034] and [0048]; “[i]n particular, a dynamic gain equalization function (DGEF) can be incorporated within wavelength blockers 225 and 240 to provide per-channel gain equalization so that all “through” and “add” channels are essentially at the same power level when outputted from the respective wavelength blockers 225 and 240. Dynamically adjusting gain of the optical channels therefore can effectively compensate for the aforementioned power divergence that may occur in the optical channels and which worsens as optical channels traverse multiple repeater (e.g., amplifier) and other add/drop nodes”. “Again, wavelength blocker 440 may also include a dynamic gain equalization function (DGEF) to provide a per-channel gain equalization capability so that the power of the optical channels being added can be maintained at a level approximately equal to the average of the power of the optical channels in “through” path 426”), and an add coupler for coupling the add path to the network (e.g., combiner 230 in Figure 2, or the combiner 430 in Figure 4).

Especially, the claimed feature of “controlling an amplitude of the added signals” is clearly taught by Caroli. The reference Caroli reads on the claims.

2). Applicant’s argument – “Because Caroli failed to disclose a wavelength selective filter with variable-per-channel attenuation for blocking channels not carrying

signals to be added to the network the applicants believe that the present invention as defined in the independent claims is novel”.

Examiner’s response – As discussed above, Caroli discloses a wavelength selective filter with variable-per-channel attenuation for blocking channels not carrying signals to be added to the network or controlling an amplitude of the added signals.

3). Applicant’s argument – “The present invention is also non-obvious over Caroli when taken on its own or in any combination with other prior art. A person skilled in the art would not be motivated to use the teachings of Caroli in order to arrive at the solution as defined in the present invention because Caroli is not concerned with the problem of optical signal-to-noise ratio. Additionally, blocking (on an add path) a channel to be added results in this channel not being added to the through path and therefore cannot be regarded as a standard or obvious procedure”.

Examiner’s response – In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., “concerned with the problem of optical signal-to-noise ratio”) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Also, as discussed above, Caroli's wavelength blocker includes a dynamic gain equalization function (DGEF) to provide a per-channel gain equalization capability so that the power of the optical channels being added can be maintained at a level approximately equal to the

average of the power of the optical channels in "through" path, therefore, it is obvious that Caroli's procedure is OSNR related.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 9, 10, 12, 13 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Caroli et al (US 2003/0002104).

1). With regard to claims 9, 12 and 13, Caroli discloses a dense wavelength division multiplexing (DWDM) optical communications network having a plurality of nodes (Figure 1, the ADD/DROP nodes) for an n-channel dense wavelength division multiplexing (DWDM) optical network (Figure 1, N channels are added or dropped), each node comprising: an add path (e.g., 231 in Figure 2, or 431 in Figure 4) for adding an n-channel wavelength multiplex onto the network, some of the n-channels carrying signals to be added onto the network (e.g., Figures 2 and 4, N channels are added or dropped, [0017]), the add path including an n signal channel combiner (the MUX 235 in Figure 2, or MUX 435, 436 and combiner 437 in Figure 4) for combining the n-channel signals, an optical amplifier (e.g., the amplifier 438 in Figure 4) for amplifying an output

of the signal combiner, a multichannel wavelength selective filter (the λ -BLOCKER/DGEF 240 in Figure 2, or the λ -BLOCKER/DGEF 440 in Figure 2) with variable-per-channel attenuation (DGEF in the wavelength blockers) for blocking channels not carrying signals to be added to the network or controlling an amplitude of the added signals ([0028], [0031]-[0034], [0048]), and an add coupler for coupling the add path to the network (e.g., combiner 230 in Figure 2, or the combiner 430 in Figure 4).

2). With regard to claims 10 and 15, Caroli et al further discloses wherein the variable attenuator on any given channel is set to block the signal on that channel if no signal on that channel is to be added onto the network, or used to control the amplitude of the added signals ([0028] and [0031]-[0034]), and a variable optical attenuator arranged within the wavelength blockers (DGEF, [0028] and [0031]-[0034], [0048]).

In Figures 2 and 4, although Caroli et al does not expressly show “wherein the multichannel wavelength selective filter includes an n-channel demultiplexer having n outputs, an n-channel multiplexer having n inputs, and the variable optical attenuator is arranged between each of the demultiplexer outputs and multiplexer inputs”, an n-channel demultiplexer and an n-channel multiplexer must be present in the wavelength blocker.

Caroli et al teaches that the λ -BLOCKER/DGEF wavelength blockers incorporate a dynamic gain equalization function (DGEF) to provide **per-channel** gain equalization so that all "through" and "add" channels are essentially at the same power level when outputted from the respective wavelength blockers ([0034]); and dynamically adjusting

gain of the optical channels therefore can effectively compensate for the aforementioned power divergence that may occur in the optical channels and which worsens as optical channels traverse multiple repeater (e.g., amplifier) and other add/drop nodes. (also refer to [0048]). Therefore, it is inherent that an n-channel demultiplexer and an n-channel multiplexer must be present in the wavelength blocker and the DGEF must be arranged between each of the demultiplexer outputs and multiplexer inputs so that the multiplexed signal can be demultiplexed and the individual channel can be dynamically controlled (per-channel) by the DGEF.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 11, 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Caroli et al (US 2003/0002104).

1). With regard to claims 11 and 14, Caroli et al disclose all of the subject matter as applied to claims 9 and 14 above. But, Caroli et al does not expressly state the optical network node comprising means for running sources for generating the n-channel signals at maximum power, or running the signal sources at full power to optimize an optical signal-to-noise ratio of the signals added to the network.

However, Caroli et al teaches a wavelength blocker with variable-per-channel attenuation (DGEF) for blocking channels not carrying signals to be added to the network or controlling an amplitude of the added signals. It is well known that while the sources for generating the n-channel signals are run at maximum power, the VOA or DGEF can be fully activated to attenuate the channel power to a desired level and block the noise ([0048]); otherwise, if the sources are run below a predetermined level, the VOA/DGEF would not participate in the controlling. Therefore, it is obvious to one skilled in the art to run the signal sources at maximum power so that the multichannel wavelength selective filter can be used to attenuate the signal and amplifier noise, and then the SNR of the added channel can be improved.

2). With regard to claim 16, Caroli et al disclose all of the subject matter as applied to claims 13 and 15 above. And Caroli et al further discloses wherein the non-signal carrying channels are blocked by attenuating to zero the outputs from the demultiplexer corresponding to those channels ([0031]-[0032]).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Monnard et al (US 6,633,430).

Lichtman et al (US 7,106,969).

Otsuka et al (US 6,538,782).

Fang et al (US 6,504,963).

DeGrange et al (US 2002/0105695).

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LI LIU whose telephone number is (571)270-1084. The examiner can normally be reached on Mon-Fri, 8:00 am - 5:30 pm, alternating Fri off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Vanderpuye can be reached on (571)272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Li Liu
April 21, 2008

/Kenneth N Vanderpuye/
Supervisory Patent
Examiner, Art Unit 2613